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CEG 498: Design Experience

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CEG 498 - Design Experience : Syllabus
Department of Computer Science and Engineering
Wright State University
Fall 2008 - Winter 2009

Brief Description

CEG 498 (Design Experience) is a summative computer engineering design project course that builds upon previous engineering, science, mathematics and communications course work. CEG 498 projects are a minimum of two quarters in length and must be completed in groups of at least three students. Projects are selected under the guidance of the course instructor and are tailored to both student interest and formal classroom preparation. Students are evaluated both on their individual contributions as recorded in a graded engineering journal and on the quality of their collective efforts as reflected in group generated products.

Student groups meet with the course instructor at least once per week for evaluation and guided discussion. CEG 498 also contains a formal seminar series covering a number of areas of engineering practice. The formal seminar series is meant to augment the weekly guided discussions. Active participation will be required.

Instructor

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Textbook

There is no required textbook.

Detailed Course Description

CEG 498 is project-based course. Students will work in groups to complete some significant engineering project of their choosing. In addition, students will be required to actively participate in a seminar series on professional engineering practice. Topics will include, but not be limited to, discussions of engineering ethics, engineering economics, and intellectual property rights.

Each project group will be required to manage its own efforts to complete its project in a timely manner. Group members will be required to keep individual journals recording both their efforts as well as their personal impressions of the project. Students will be graded based on both the quality of the group-produced products and the quality of their individual efforts as reflected in their design journals.

There will be an initial meeting scheduled early in the quarter where we will discuss potential projects and determine how the class will be divided into groups. Students are encouraged to bring their own project ideas, but several will be provided for those requiring assistance in project selection. During that initial meeting we will also discuss, in detail, what is expected of you as an individual and what is expected of your group.

Additional meetings of the class will be by appointment by project group. Every project group will be required to schedule a weekly meeting. These meetings must be attended by every group member as well as the course instructor. Since the projects will be student managed, the exact nature and style of these meetings is at the group's discretion. However, every member of the group is expected to participate.

The purpose of the journal is to be an archival record of your personal progress, contributions, and impressions. What you should be shooting for is a document that both you and the instructor can use to determine "what you were doing and thinking" at particular points in the project. In the "real world" such journals are often the basis for patent claims and defenses, and thus may become a legal document. Since the journal is largely a personal document, its format and specific content are up to you. All journals, however, must meet the following minimal standards:

1. Journals must be neat. Handwriting and sketches do not have to be publication quality, but they must be legible.
2. One substantive, dated entry must be made per week. Additional entries are encouraged. No detail is too small.
3. Design ideas should be recorded as they occur to you. Attaching code listings and screen dumps relating to the design idea is encouraged.
4. Results of testing and subsequent revisions of ideas should be recorded.
5. Did you get ideas, code, or techniques from some other person either inside or outside of the group? Record it. Ethics demands you properly attribute intellectual property to its creator.
6. Do you detect problems in your own work habits or in the dynamics of your group? Record them with constructive comments on how to fix them. Have you detected habits in other members of your group that seem to contribute to the common good? Record your observations and attempt to emulate those behaviors if you can.

Sketchy, infrequently utilized, sloppy, poorly written journals will have an adverse effect upon your final grade. Journals are subject to informal spot-inspection at any time by the instructor to insure that they are being kept regularly and with appropriate format and content. The instructor will collect the journals twice during the quarter for detailed examination and evaluation.

Points in the "Individual Performance" Category will be awarded as follows:

<i>Regularity</i> (5 points)	The fraction of weeks in the quarter for which there is a substantive journal entry times 5.
<i>Neatness</i> (5 points)	The instructor's subjective evaluation of the journal's clarity, legibility, and organization
<i>Design Ideas</i> (10 points)	The instructor's evaluation of the quality of code, algorithm descriptions, and any other figures relating to design ideas as reflected in your journal.
<i>Design Testing and Critical Review</i> (10 points)	The instructor's evaluation of how well you ensured the merit of your ideas. Did you test? How? Why should anyone believe your ideas are workable? Are your ideas safe? You are ethically responsible to protect the users of your product from harm. Have you? Although most actual testing will occur in the second quarter, this includes consideration of testing and test issues during the first quarter.
<i>Group Observations</i> (5 points)	The instructor's evaluation of your observations of group dynamics. See point 6 in the standards for the design journal.
<i>Contribution and Progress</i> (10 points, 1 point per week)	Instructor's subjective evaluation of whether you make adequate progress each week. Assessed based on your report at group meetings.
<i>Attendance</i> (5 points)	The fraction of total group meetings attended times five